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THE CROW IN COLORADO.

BY W. H. BERGTOLD.

A STUDY of the technical status, and distribution of the Crow in Colorado discloses, at once, an interesting, and a peculiar situation.¹

The Crow was first recorded in Colorado, so far as I am able to learn, by Aiken (1), who reported it in this State in 1872 under the name *Corvus americanus*; thereafter several other writers mentioned the bird, as having been found in Colorado:— Ridgway in 1877 (2), Stephens in 1878 (3), and Drew in 1881 and 1885 (4), all using the same name employed by Aiken.

Ridgway (5) erected the subspecies *hesperis* in 1887, at that time giving its range substantially as outlined today by the A. O. U. 'Check-List'; the validity of this subspecies was not admitted by the A. O. U. Committee until July, 1908 (6). In his original description of the new subspecies (*hesperis*) Ridgway did not state how many skins he examined nor whence they came, but gave as the eastern limit of the new subspecies "east to the Rocky Mountains," while in his later account (7) of *hesperis*, for which he utilized twenty-three skins for study purposes, he carefully qualifies the eastern limit by adding "from the Eastern portion of the arid region?" It is to be noted that he did not definitely mention Colorado as being included within the *hesperis* area; in his coincidental review of the literature possibly related to the new subspecies, however, all citations of previous records of Colorado Crows are grouped under the literature of subspecies *hesperis*. This probably was done because he did not have time to sift out the records relating to the eastern slope from those of the western slope so as to place them under the literature relating to the individual subspecies. So far as Colorado is concerned in this question, Ridgway probably did not take this matter up in detail because

¹ My thanks are due to the following friends who made it possible for me to study crow skins from parts of the State not covered by my own collection; L. A. Adams, A. H. Felger, J. D. Figgins, F. C. Lincoln, E. R. Warren, Witmer Stone, and to my various friends for permitting me to quote them in the body of this paper.

there is not a single Crow skin in either the National Museum, or in the Biological Survey Collections, which came from Colorado.

Most, if not all, of the writers who thereafter, directly or indirectly, touched on the Crow's position in Colorado, made their diagnoses as to subspecies on regional grounds alone.

In the interval between Ridgway's erection of subspecies *hesperis*, and its admittance to the A. O. U. 'Check List' (1887 to 1908) Morrison (8) and Drew (19) were, so far as I know, the only writers to record the Crow in Colorado, Morrison mentioning it first, as *Corvus frugivorus* and the second time (9) as *Corvus americanus*, while Drew entered his record under the latter name.

Cooke's 'List of the Birds of Colorado' was published in March 1897, and in it he grouped all of the previous Colorado Crow records, regardless of region, under the name *Corvus americanus*; notwithstanding that Ridgway had ten years previously separated the eastern and the western Crows, Cooke (22) logically disregarded this action, because he followed the A. O. U. 'Check-List' in assembling his 'List of Colorado Birds.' In all the various supplements which Cooke published to his list (the last being in 'The Auk' of October 1909) he did not change his early naming of the Colorado Crows, allowing them to stand as *Corvus americanus* or its synonym. I am confident that he recognized the probability of there being two subspecies in the State, but wisely refrained from opening the question because of lack of material available for definite determination. Furthermore I am given to understand that there are no Crow skins in the collections of the State Agriculture College at Fort Collins, where Cooke was located when he compiled his 'List,' which fact would lend support to the idea that his omission to mention the possibility of both the Eastern and the Western Crows being found in Colorado was due to his unwillingness to pass judgment on a question without the support of definite material or data.

In his 'The Present Status of the Colorado Check-List of Birds' (10), Cooke again was silent as to the presence of subspecies *brachyrhynchos* or of *hesperis* or of both within the confines of Colorado, though at least three writers (11), (12), (13), had previously mentioned the Colorado Crow in their respective papers, as being *hesperis*; Cooke was too careful and experienced an ornithologist

to have overlooked these records and I am sure his silence was judiciously intentional and premeditated.

It thus appears that between 1887 and 1912 the Crows of Colorado had been recorded by some observers, so far as subspecies were concerned, as *brachyrhynchos*, and by others as *hesperis*, but so far as I know and am able to learn, none suggested or recorded that these two subspecies coexisted in the State.

I am inclined to believe that Sclater's (13) designating the Colorado Crow as *hesperis* was made on purely geographical grounds, because the collection then at his command, (that at Colorado College, Colorado Springs) contains but one crow skin, a partial albino, which proves to be, under examination, subspecies *brachyrhynchos*. E. R. Warren allows me to state that he has no Crow skins in his collection, and that he made his subspecific diagnosis of *hesperis*, for the birds seen near Bulah, Colorado, on geographic grounds only. In later records Warren (14) wisely refrains from trying to decide as to the subspecies, when listing the Crows seen in Montrose County, and in northern Colorado, mentioning the birds merely as *Corvus brachyrhynchos*, and Henderson (18) did likewise in his Boulder County List.

I do not know on what grounds Hersey and Rockwell (11) made their statement that subspecies *hesperis* was to be found on the eastern slope of the Rockies.

Since Cooke's last word on our Colorado avifauna, two more writers have given the Crow as a species found within the State, each listing it as *hesperis*, and both records are for the Atlantic slope. I am permitted by F. C. Lincoln (15), the first of these two writers, to say that he did not take any Crows in Yuma County, and that he made his subspecific diagnosis on geographic grounds alone. It is now, unhappily, impossible to determine what led Betts (16), the second of these two writers, to conclude that the Boulder County Crow was *hesperis*. I do not know whether he collected specimens in Boulder County; but Junius Henderson informs me that Betts sent crow *eggs* to the National Museum. But he probably did not send skins for, as has already been said, there is not a Crow skin in the National Museum collection, from Colorado. The internal evidence (18) points to the belief that Betts too, recorded the Boulder County Crow as *hesperis*, on geographic grounds alone.

Crows seen by Warren (17 and 20) in other parts of the State are given as subspecies *brachyrhynchos*, but again named on regional grounds only.

From the foregoing it appears that the Crows of Colorado were listed, principally as *Corvus americanus* up to the acceptance of subspecies *hesperis* in the A. O. U. 'Check-List,' and since then variously listed as *Corvus brachyrhynchos*, *Corvus brachyrhynchos brachyrhynchos*, or *Corvus brachyrhynchos hesperis*, but, to repeat, so far as I can learn, in no instance have any of the last two kinds of records been made on skin determinations. This statement is based on a study of the published records, and on a considerable relevant correspondence with my associates throughout the State; if I err the statement is open and subject to correction.

The western third of Colorado lies on the Pacific slope, and the eastern two-thirds on the Atlantic and on both of these slopes the Crow has been detected, and variously recorded as to subspecies. The A. O. U. 'Check-List' does not speak of *hesperis* actually extending eastward to the Rocky Mountains, but Mr. Ridgway, in a recent communication said to me "I feel quite sure that any Crow found west of the Divide in Colorado would be *C. b. hesperis*. On the other hand, those found on the eastern side would almost certainly be *C. b. brachyrhynchos*."

I am fortunate, not only in having material in my own collection, which substantiates Ridgway's belief, but in also having had access, thanks to my obliging friends, to specimens and data which also show that his belief is essentially correct.

I have been able to study fourteen Crow skins from the eastern side of the Rockies in Colorado, six males and eight females; of the males three are typical *brachyrhynchos*, two are clearly *hesperis*, and the last is mainly *brachyrhynchos*, but with weaker bill and tarsus than is ordinarily found with that subspecies. It is of interest to note that this last specimen was taken in Weld County close to the locality whence came the two previously mentioned *hesperis* skins. It is much more difficult to allocate the females of this group of skins; however four are more typically subspecies *brachyrhynchos* than is another female in my collection which I collected many years ago in New York, and another female is also of this subspecies, but with a weak bill, while the remaining three

are too near the dividing line to be definitely located as to subspecies, all showing characters of one or of the other of the two forms under study, in varying degrees of intensity.

I have been able to study but one Crow skin from the western slope in Colorado, to-wit, a skin in my collection, which was taken at Ignacio, Colorado, in October, 1917, by my friend and colleague, Dr. Walter L. Mattick; fortunately it is the skin of a male, and is typical *hesperis*.

We are now on firm ground; those skins from the eastern slope which are most likely to be characteristic of a given subspecies, to-wit, males, show that both *brachyrhynchos* and *hesperis* are to be found on that slope, and the Ignacio skin proves that *hesperis* occurs on the western slope.

Hence one can say now that both *Corvus brachyrhynchos brachyrhynchos* and *Corvus brachyrhynchos hesperis* are to be included in future lists of Colorado birds.

The common Crow is normally a bird of moderately large and fairly dense timber, a growth found in Colorado only along the larger streams and in the mountains; if one plot the Crow stations of Colorado on a map, it at once becomes patent that most, if not all, of these stations are to be found along the courses and headwaters of the State's larger streams. This fact seems to lend color and support to the idea that subspecies *brachyrhynchos* probably penetrated Colorado from the east by following the larger streams towards the mountains, for it is along these rivers that one finds trees to the Crow's liking, and too, Crows are increasingly more common as one travels eastward along these watercourses. It would seem reasonable to believe that along similar natural "crow" highways *hesperis* would find its way eastward from the Pacific side into Colorado.

The smaller size, alone, of *hesperis*, often makes it distinguishable in the field, a fact which first came to my attention while in the "hills" on the Gila River in New Mexico, in 1906. During the same year I saw a considerable flock of Crows immediately south of Antonito, Colorado; I was then again impressed by the smaller size of these southern Colorado and New Mexico Crows. I now believe these Antonito Crows were subspecies *hesperis*; Antonito is on (or very close) to the Rio Grande River, which drains part

of the Atlantic-Gulf of Mexico watershed, part of which watershed forms the western portion of Texas, an area included in the present known range of *hesperis*. It does not seem unreasonable to believe that *hesperis* works its way from western Texas, up along the Rio Grande, finally reaching the vicinity of Antonito, and also the San Luis Valley. In support of this latter view I am permitted to say that Mrs. Jesse Stevenson of Monte Vista, Colorado, recently saw a Crow for the first time in twenty-five years in this valley, and was at once impressed with its small size as compared with those she formerly studied in the East.

As mentioned above, it is clear that *hesperis* occurs on both sides of the Rocky Mountains in Colorado. Now one must ask if subspecies *brachyrhynchos* occurs on the western slope as well as on the eastern slope.

I cannot even inferentially decide whether or not subspecies *brachyrhynchos* reaches the west side of the Rockies in Colorado; there is but one reference to it in literature, known to me, as occurring on the western slope of Colorado, to-wit, that by Warren (20) who listed the Crows of Gunnison County as subspecies *brachyrhynchos*, doing it, however, as a matter of expediency only, as he took no specimens. If this subspecies does range to the west side of the Rocky Mountains in Colorado, I believe it will be found in northwestern Colorado, coming in as a straggler from Wyoming. Records of the Crow from northwestern Colorado and southwestern Wyoming are lacking (21), or at least unknown to me.

One can hazard the guess that the Crows of southeastern Colorado are subspecies *brachyrhynchos*, but *hesperis* may also be found in that area, coming in as an infiltration from Texas. I am convinced that *hesperis* works its way up from the Lower Rio Grande Valley, along the eastern foothills, finally reaching, as we now know, as far north as Weld County.

It is highly desirable that a considerable series of Crow skins be collected from Colorado, embracing specimens especially from the western portions of the State, and also from the southern border, to the end that the exact distribution of subspecies *brachyrhynchos* and *hesperis* be definitely delimited for Colorado.

RÉSUMÉ.

I.—It can now be said categorically that the Crow occurs in Colorado in the guise of two subspecies, viz., *brachyrhynchos* and *hesperis*, both being found on the eastern slope, and only the latter on the western slope of the Rocky Mountains.

II.—The above conclusion stands if my determinations of the skins I have studied be correct; if my determinations be incorrect they show that the criteria by which these two subspecies are differentiated, are too subtle and refined for an ordinary ornithologist like myself to grasp and apply, or that the described differences between these two subspecies break down with the Crows found in Weld County.

Measurements of *hesperis* skins (8: millimeters).

Locality	Sex	Wing	Tail	Bill		Tarsus
				Length	Depth	
Weld Co.	♂	303	172	49	18	57
“ “	♂	312	178	45	17	56
Ignacio	♂	317	183	44	17	53

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WINTER ROBINS IN NOVA SCOTIA.

BY HARRISON F. LEWIS.

NEARLY every winter a few stray Robins are observed in Nova Scotia, and occasionally a small flock has been noted as present at that season, although my personal observations here during the six winters immediately previous to that of 1917-18 do not include a half dozen individuals of this species. During the winter of 1917-18, however, Robins were reported in such large numbers and over so great an area as to constitute an occurrence quite unique in the recorded ornithology of the province.

One Robin was seen by me about December 20, 1917, but unfortunately, the exact date of the observation was not recorded. In the last week of January several reports of Robins seen near Halifax were noted, and in the first two or three days of February numerous additional reports were received and I saw a few birds of this species myself. It quickly became evident that Robins were being observed near Halifax, at least, in numbers very extraordinary for the season.

As soon as it was realized that the occurrence was of an unusual character, steps were taken to secure a record of it. It is much to be regretted that, owing to the fact of the casual appearance of Robins here in ordinary winters, this realization was not reached